

COMPRESSOR DEFINITION

Designation	FMX D9C
Nominal Voltage/Frequency	230 V 43 -134 Hz
Engineering Number	513908109

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-600a		
3 Nominal voltage and frequency	230 / 43 -134	[V / Hz]	
4 Application type	Low-Medium Back Pressure (Fullmotion Compressors)		
4.1 Evaporating temperature range	-35°C to 0°C	(-31°F to 32°F)	
5 Motor type	BPM		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	6.9	[kgf/cm ²] (98 psig)	/ °C - °F
9.2 Peak	7.8	[kgf/cm ²] (111 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/6	[hp]
2 Displacement	8.74	[cm ³] (0.533 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	22.000	
3 Lubricant charge	175	[ml] (5.92 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO5	
4 Weight (with oil charge)	4.9	[kg] (10.80 lb.)
5 Nitrogen charge	-	[kgf/cm ²]

C - ELECTRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	230 V 43-134 Hz 3~ (Three phase)	
2 Starting device type	Inverter	
2.1 Starting device	VESF 2456 XXX X	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	INVERTER VESF 2456 X	
6 Start winding resistance	13.00	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	13.00	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (43 /134 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (43 /134 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (43 /134 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @220V1300RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
212	53	62	34	0.28	0.67	6.29	1.59	1.84

TEST CONDITIONS: @220V2000RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
339	85	99	52	0.40	1.06	6.49	1.64	1.90

TEST CONDITIONS: @220V3000RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
520	131	152	81	0.69	1.63	6.45	1.63	1.89

TEST CONDITIONS: @220V4000RPM			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
637	161	187	104	0.89	2.00	6.12	1.54	1.79

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1300RPM		ASHRAE32 Static				(Condensing temperature 35°C (+95°F))				
Evaporating temperature	Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%			
	°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]
-35	(-31)	127	32	37	20	0.20	0.40	6.23	1.57	1.83
-30	(-22)	173	43	51	24	0.22	0.54	7.12	1.79	2.09
-25	(-13)	229	58	67	28	0.24	0.72	8.12	2.05	2.38
-20	(- 4)	298	75	87	32	0.26	0.94	9.30	2.34	2.72
-15	(+ 5)	383	96	112	36	0.29	1.20	10.67	2.69	3.13
-10	(+14)	484	122	142	40	0.31	1.53	12.30	3.10	3.60
-5	(+23)	605	152	177	43	0.33	1.91	14.22	3.58	4.17
0	(+32)	747	188	219	45	0.34	2.37	16.48	4.15	4.83

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V1300RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	118	30	35	21	0.21	0.37	5.55	1.40	1.63
-30	(-22)	160	40	47	25	0.23	0.50	6.31	1.59	1.85
-25	(-13)	213	54	62	30	0.25	0.67	7.11	1.79	2.08
-20	(- 4)	280	70	82	35	0.28	0.88	8.01	2.02	2.35
-15	(+ 5)	362	91	106	40	0.31	1.14	9.04	2.28	2.65
-10	(+14)	463	117	136	45	0.34	1.46	10.25	2.58	3.00
-5	(+23)	583	147	171	50	0.37	1.84	11.67	2.94	3.42
0	(+32)	725	183	212	54	0.39	2.30	13.36	3.37	3.91

TEST CONDITIONS: @220V1300RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	97	24	28	22	0.21	0.30	4.50	1.13	1.32
-30	(-22)	137	35	40	26	0.24	0.43	5.27	1.33	1.54
-25	(-13)	190	48	56	32	0.27	0.60	6.01	1.51	1.76
-20	(- 4)	257	65	75	38	0.31	0.81	6.77	1.71	1.98
-15	(+ 5)	341	86	100	45	0.35	1.07	7.59	1.91	2.22
-10	(+14)	443	112	130	52	0.40	1.40	8.51	2.14	2.49
-5	(+23)	565	142	166	59	0.44	1.79	9.58	2.41	2.81
0	(+32)	710	179	208	66	0.48	2.25	10.84	2.73	3.18

TEST CONDITIONS: @220V2000RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	202	51	59	33	0.26	0.63	6.18	1.56	1.81
-30	(-22)	267	67	78	38	0.30	0.84	7.05	1.78	2.07
-25	(-13)	352	89	103	44	0.33	1.10	8.07	2.03	2.36
-20	(- 4)	457	115	134	50	0.36	1.44	9.23	2.33	2.70
-15	(+ 5)	584	147	171	55	0.40	1.84	10.53	2.65	3.09
-10	(+14)	732	185	215	61	0.44	2.31	11.98	3.02	3.51
-5	(+23)	903	228	265	67	0.49	2.86	13.57	3.42	3.98
0	(+32)	1097	276	321	71	0.56	3.48	15.31	3.86	4.49

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V2000RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	187	47	55	34	0.27	0.59	5.57	1.40	1.63
-30	(-22)	251	63	74	40	0.32	0.79	6.30	1.59	1.85
-25	(-13)	334	84	98	47	0.36	1.05	7.13	1.80	2.09
-20	(- 4)	438	110	128	54	0.40	1.38	8.06	2.03	2.36
-15	(+ 5)	562	142	165	62	0.44	1.77	9.09	2.29	2.66
-10	(+14)	709	179	208	69	0.50	2.24	10.24	2.58	3.00
-5	(+23)	877	221	257	76	0.56	2.77	11.48	2.89	3.37
0	(+32)	1068	269	313	83	0.64	3.39	12.84	3.24	3.76

TEST CONDITIONS: @220V2000RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	160	40	47	34	0.27	0.50	4.73	1.19	1.38
-30	(-22)	223	56	65	41	0.33	0.70	5.42	1.37	1.59
-25	(-13)	304	77	89	49	0.38	0.96	6.17	1.56	1.81
-20	(- 4)	406	102	119	58	0.43	1.28	6.99	1.76	2.05
-15	(+ 5)	529	133	155	67	0.49	1.66	7.87	1.98	2.31
-10	(+14)	672	169	197	76	0.55	2.12	8.83	2.22	2.59
-5	(+23)	838	211	246	85	0.63	2.65	9.85	2.48	2.89
0	(+32)	1027	259	301	94	0.72	3.25	10.94	2.76	3.21

TEST CONDITIONS: @220V3000RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	287	72	84	50	0.36	0.90	5.72	1.44	1.68
-30	(-22)	399	101	117	60	0.45	1.25	6.69	1.69	1.96
-25	(-13)	532	134	156	69	0.52	1.67	7.67	1.93	2.25
-20	(- 4)	690	174	202	79	0.58	2.17	8.70	2.19	2.55
-15	(+ 5)	878	221	257	90	0.65	2.76	9.81	2.47	2.87
-10	(+14)	1101	277	323	100	0.74	3.47	11.02	2.78	3.23
-5	(+23)	1364	344	400	110	0.87	4.31	12.38	3.12	3.63
0	(+32)	1672	421	490	120	1.04	5.30	13.92	3.51	4.08

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V3000RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	257	65	75	51	0.37	0.81	5.02	1.26	1.47
-30	(-22)	368	93	108	62	0.49	1.15	5.90	1.49	1.73
-25	(-13)	499	126	146	73	0.58	1.57	6.79	1.71	1.99
-20	(- 4)	654	165	192	85	0.66	2.06	7.71	1.94	2.26
-15	(+ 5)	839	211	246	96	0.73	2.64	8.69	2.19	2.55
-10	(+14)	1058	267	310	108	0.81	3.34	9.77	2.46	2.86
-5	(+23)	1317	332	386	120	0.92	4.16	10.98	2.77	3.22
0	(+32)	1620	408	475	132	1.07	5.14	12.35	3.11	3.62

TEST CONDITIONS: @220V3000RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	241	61	71	52	0.38	0.76	4.65	1.17	1.36
-30	(-22)	346	87	101	64	0.53	1.08	5.41	1.36	1.59
-25	(-13)	469	118	137	76	0.65	1.47	6.16	1.55	1.80
-20	(- 4)	616	155	181	89	0.74	1.94	6.92	1.74	2.03
-15	(+ 5)	792	200	232	103	0.82	2.49	7.73	1.95	2.27
-10	(+14)	1002	253	294	116	0.90	3.16	8.63	2.17	2.53
-5	(+23)	1251	315	367	130	1.00	3.96	9.64	2.43	2.82
0	(+32)	1544	389	452	143	1.13	4.90	10.80	2.72	3.16

TEST CONDITIONS: @220V4000RPM		ASHRAE32 Static			(Condensing temperature 35°C (+95°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	358	90	105	64	0.45	1.12	5.60	1.41	1.64
-30	(-22)	509	128	149	77	0.58	1.59	6.59	1.66	1.93
-25	(-13)	695	175	204	93	0.71	2.18	7.48	1.88	2.19
-20	(- 4)	917	231	269	111	0.85	2.88	8.30	2.09	2.43
-15	(+ 5)	1173	296	344	129	1.00	3.69	9.11	2.30	2.67
-10	(+14)	1463	369	429	148	1.16	4.61	9.96	2.51	2.92
-5	(+23)	1787	450	524	164	1.33	5.65	10.88	2.74	3.19
0	(+32)	2145	540	628	177	1.52	6.80	11.92	3.00	3.49

E - PERFORMANCE - CURVES

TEST CONDITIONS: @220V4000RPM		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	315	79	92	65	0.45	0.99	4.91	1.24	1.44
-30	(-22)	453	114	133	78	0.60	1.42	5.79	1.46	1.70
-25	(-13)	632	159	185	95	0.76	1.98	6.59	1.66	1.93
-20	(- 4)	851	214	249	115	0.91	2.67	7.36	1.85	2.16
-15	(+ 5)	1109	280	325	136	1.07	3.49	8.14	2.05	2.39
-10	(+14)	1408	355	412	157	1.24	4.44	8.99	2.26	2.63
-5	(+23)	1745	440	511	176	1.42	5.52	9.93	2.50	2.91
0	(+32)	2121	534	621	193	1.61	6.72	11.03	2.78	3.23

TEST CONDITIONS: @220V4000RPM		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
Evaporating temperature		Cooling capacity (Qe) +/- 5%			Input power (We) +/- 5%	Electric current +/- 5%	Mass flow rate +/- 5%	Efficiency EER & COP +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	(-31)	303	76	89	65	0.49	0.95	4.63	1.17	1.36
-30	(-22)	414	104	121	79	0.66	1.30	5.30	1.34	1.55
-25	(-13)	571	144	167	97	0.82	1.79	5.92	1.49	1.74
-20	(- 4)	773	195	227	118	0.98	2.43	6.54	1.65	1.92
-15	(+ 5)	1021	257	299	141	1.15	3.21	7.21	1.82	2.11
-10	(+14)	1313	331	385	164	1.32	4.14	7.96	2.01	2.33
-5	(+23)	1649	416	483	187	1.49	5.22	8.84	2.23	2.59
0	(+32)	2029	511	595	207	1.67	6.43	9.90	2.50	2.90

F - EXTERNAL CHARACTERISTICS

1 Base plate	European Standard FMX		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 45° up + 11° to Back		
3.2 DISCHARGE	5.1 +0.10/+0.00	[mm]	(0.201" +0.004"/+0.000")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 45° up + 37° to Back		
3.3 PROCESS	6 +0.08/-0.08	[mm]	(0.236" +0.003"/-0.003")
3.3.1 Material	Copper(OD)		
3.3.2 Shape	Slanted 45° up + 57° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		